Remarks

Reconsideration is respectfully requested of the Office position. In the present amendment all independent claims have been amended to narrow the ranges of modacrylic fiber, cotton fiber, and aramid respectively to weight percent ranges 45 to 60, 15 to 35, and 5 to 30 respectively. These limitations are present in the dependent canceled claims. The present claims under prosecution are 1, 3-11, 13-19.

Rejection Under 35 U.S.C. 103 (a)

Claims 1, 2, 11 to 14, 19, and 20 stand rejected under 35 U.S.C. 103 (a) based on Campbell et al. (Campbell) U.S. Patent 6,787,228 in view of Nelson et al. (Nelson) U.S. Patent 4,025,491.

The Office rejection initially sets forth the disclosure of Campbell including the statement:

> Campbell discloses that the yarn may comprise at least 70 weight percent modacrylic fibers **(about 70% is considered to read on 60%)** and at least 3 weight percent aramid (column 4, lines 9-56). (emphasis added)

Clarification of the above wording is requested. Specifically, the wording of "read on" is considered inaccurate and wrong. Does a synonym for "read on" include --encompass--? Obviously, "about 70%" does not "encompass" or read on a 60%, namely about a 10% difference, which is present in the independent claims under prosecution.

It is noted that pages 3, line 2 and 3 of the Office rejection states:

> ...in the event that it is shown that about 70% does not read on 60%...

The remarks above are directly applicable concerning "read on." Additionally, it is noted that Campbell discloses in a preferred mode that a fabric contains "about 90 percent or more of modacrylic fibers in the wording."

> Preferably, fabric with blends containing about 90 percent or more of the modacrylic fibers and at least about 3 percent of the high energy absorptive fibers provides the most acceptable results.

Thus Campbell already describes in a preferred mode a percentage which lies about 30% in a closest comparison to the upper limit of the independent claims under prosecution.

The Office rejection admits that cotton fibers are not within the disclosure of Campbell in the wording:

> Campbell does not specifically mention the addition of cotton fibers, ...

To cure this deficiency, the Office rejection turns to Nelson with the wording:

> ...but Nelson discloses that it is known in the flame resistant fabric art to blend synthetic fibers with between 15 to 65 weight percent cotton to provide the fabric with the desired aesthetic hand properties, moisture absorption properties, and to minimize static electricity (see entire document including column 1, lines 62-66 and the paragraph bridging columns 4 and 5).

Then the conclusion in the Office rejection is as follows:

> It would have been obvious to one having ordinary skill in the art at the time the invention was made to add between 15 to 65 weight percent cotton fibers to the yarn, because the cotton fibers provide the yarn with the desired aesthetic hand properties, moisture absorption properties, and to minimize static...

This Office rejection is respectfully traversed.

Since the Office rejection cited column 1, lines 62-66 and the paragraph bridging columns 4 and 5, the wording of Nelson is reproduced. However, lines 62-66 are continued to the next two sentences extending to column 2, line 8 for the paragraph to be read in a proper context:

> Generally polyethylene terephthalate fibers are blended with hydrophilic fibers, such as cotton, rayon, wool, etc. to provide the textile with aesthetically desirable hand, moisture absorption to minimize static electricity, etc. Unfortunately, blends of polyester and hydrophilic fibers have poorer fire-retardant properties than the individual fibers. For example, it is well known that textiles prepared from polyester fiber that passes the children's sleepwear test and hydrophilic fiber that passes the children's sleepwear test often fail this test unless each of the component fibers contains substantially more fire-retardant than actually necessary to individually pass this test. This is apparently due to a latticing effect. Accordingly, there is a need for polyesters having a very high concentration of fire-retardants.
>
> The preferred polyesters of this invention, wherein at least 55 mole percent of the dicarboxylic acid components

> are 2,5-dibromoterephthalic acid moieties, are particularly well suited for forming fire-retardant hydrophilic/polyester yarn blends. The polyester component of the blend comprise from 35 to 85% by weight with correspondingly 65 to 15% by weight hydrophilic yarn depending upon the aesthetic properties desired.
> ...suitable hydrophilic fibers include cotton, wool, linen, silk, rayon, regenerated cellulose, etc.

The above paragraphs which are within the column and line number cited in the Office rejection for the disclosure of Nelson fail to portray an accurate picture of this publication. Illustratively the first paragraph cited above the last sentence has the following wording:

> **Accordingly, there is a need for polyesters having a very high concentration of fire retardants.** (emphasis added)

Therefore, the Office position is premised on ignoring a direct disclosure of Nelson namely, its purpose of adding a high concentration of fire retardants to a polyester. The preceding quotation of Nelson is consistent with its column 2, lines 42 to 44 for a combination of fire-retardant polyesters in combination with hydrophilic fibers as follows:

> Another object of this invention is to provide a fire-retardant polyester having good mechanical fiber properties suitable for use in hydrophilic fiber blends.

In traversal of the Office rejection, it is noted that in the paragraph bridging column 4 and 5 (directly cited in the Office position) a generalized statement is present of suitable hydrophilic fibers, namely:

> suitable hydrophilic fibers include cotton, wool, linen, silk, rayon, regenerated cellulose, etc.

The above quotation from Nelson which encompass a paragraph relied upon in the Office rejection serves the purpose of applicant directly challenging the following Office statement as an inaccurate portrayal of Nelson. The Office wording which is followed by a conclusion of Nelson with Campbell is as follows:

> **Nelson also discloses that it is known in the flame resistant fabric art to blend synthetic fibers with between 15 to 65 weight percent cotton to provide the fabric with the desired aesthetic hand properties, moisture absorption properties, and to minimize static electricity.** Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was

> made to vary the amount of modacrylic fibers, such as below 70 weight percent, to provide the yarn with more cotton fibers and or aramid fibers, because it is understood by one of ordinary skill in the art that the weight percent of modacrylic, cotton, and aramid fibers determines properties such as flame resistance, tensile strength, aesthetic hand properties, moisture absorption properties, and static electricity properties, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. (emphasis added)

In challenging the interpretation of Nelson in the highlighted words above, the Office position directly ignores wording of Nelson in the direct referenced column and line numbers.

As a first point, Nelson is directed to incorporation of a "very high concentration of fire–retardants" into polyester. The title of Nelson references the fire-retardant in "Poly(Tetramethylene Dibromoterepthalate) Yarns."

As a second point, Nelson stands for a combination of polyester having a high concentration of fire-retardant in combination with a hydrophilic fiber. Cotton is named in a list of suitable fibers on column 5, lines 1 and 2 for "cotton, wool, linen, silk, rayon, regenerated cellulose, etc."

As a third point, it seems necessary to quote slightly different wording for the Office Action concerning Nelson which appears on page 2, lines 3 to 7 from the end of the page namely:

> but Nelson discloses that **it is known in the flame resistant fabric art to blend** synthetic fibers with between 15 to 65 weight percent cotton **to provide the fabric with the desired aesthetic hand properties, moisture absorption properties, and to minimize static electricity** (see entire document including column 1, lines 62-066 and the paragraph bridging columns 4 and 5). (emphasis added)

In this third point, it is respectfully submitted that the highlighted wording presents a false portrayal of the disclosure and teachings of Nelson. More specifically, column 1, lines 62 to 66 (the exact lines of the Office rejection) reads:

> Generally **polyethylene terephthalate fibers are blended** with hydrophilic fibers, such as cotton, rayon, wool, etc. **to provide the textile with aesthetically desirable hand, moisture absorption to minimize static electricity, etc.** (emphasis added)

Thus the Office position has taken the liberty to substitute a generalized wording of "it is known in the flame resistant fabric and to blend ..." for a proper wording of –it is known for polyethylene terepthalate fibers to blend--. The Office generalization supports a flowed, inaccurate manner for substitution of Nelson in the disclosure of Campbell.

In the above remarks, Applicant has belabored the point concerning a proper reading of Nelson versus a reading of Nelson for the Office standpoint. It is respectfully submitted that the Office reading should be withdrawn in light of the above remarks.

In this traversal of the Office position only brief remarks are believed necessary concerning Campbell. The Office position admits Nelson does not "mention the addition of cotton fibers." It is submitted that one of ordinary skill in the art would not substitute cotton, and more specifically cotton in a range required in the present claims under consideration.

Campbell requires a high content of modacrylic of at least about 70 percent, preferably about 90 percent which differs from the present claims. Additionally, the present independent claims require a range of 45 to 60 weight percent modacrylic fiber in combination with specific weight percentages of cotton and aramid fiber namely 15 to 33 and 5 to 30 respectively.

In summary, it is considered one of ordinary skill in the art could not derive applicant's claimed invention from Campbell and Nelson. Two separate reasons are present for this summary. One of ordinary skill in the art would not combine these two publications. Secondly, for purposes of argument, even if one of ordinary skill in the art did attempt to combine Campbell and Nelson, the combination would fail. The polyester of Nelson required to contain a high content of fire retardant with a generalized disclosure of hydrophilic fiber is insufficient in a substitution in Campbell to arrive at the claimed invention.

Claims 3 to 5 and 15 to 17 stand rejected under 35 U.S.C. 103 (a) over Campbell and Nelson, previously discussed, further in view of Smith, Jr. (Smith) U.S. Patent 4,865,906. It is considered Smith is applied to disclosure different percentages of meta- and para-aramid in combination. Smith does not cure the deficiency of the combination of Campbell and Nelson for the reasons previously discussed.

Claims 6 to 8 stand rejected under 35 U.S.C. 103 (a) based on Campbell, Nelson, Smith, and Gadoury U.S. Patent 5,824,614. The further Gadoury publication is believed to be cited for use of carbon and/or metal fibers. Since the added Gadoury does not cure the deficiency of Campbell and Nelson, this rejection likewise must fail.

Claims 1 to 5, 11 to 17, 19, and 20 stand rejected under 35 U.S.C. 103 (a) based on Smith and Nelson [also applied in other rejections under 35 U.S.C. 103 (a)].

Concerning Smith, the Office rejection states:

> ...Smith discloses a yarn suitable to provide arc and flame protection comprising 25 to 85 weight percent polyacrylonitril, 0 to 35 weight percent para-aramid, and 10- to 35 weight percent meta-aramid (22 to 100 weight percent meta-aramid fibers and from 0 to 78 weight percent para-aramid fibers on the basis of total aramid fiber) (column 2, lines 25-42).
>
> Smith discloses that wool fibers may be added to provide better hand (column 2, lines 48-49), but smith does not specifically mention the addition of cotton fibers.

To cure the deficiency of Smith, the Office rejection turns to Nelson as follows:

> Nelson discloses that it is known in the flame resistant fabric art to blend synthetic fibers with between 15 to 65 weight percent cotton to provide the fabric with the desired aesthetic hand properties, moisture absorption properties, and to minimize static electricity (see entire document including column 1, lines 62-66 and the paragraph bridging columns 4 and 5).

The Office rejection is premised on the following conclusion:

> It would have been obvious to one having ordinary skill in the art at the time the invention was made to add between 15 to 65 weight percent cotton fibers to the yarn, because the cotton fibers provide the yarn with the desired aesthetic hand properties, moisture absorption properties, and to minimize static electricity.

This rejection is respectfully traversed. The failure in the teachings and disclosure of Nelson have been discussed earlier in this amendment. It is respectfully submitted that the Office interpretation of Nelson is inaccurate and flawed. Accordingly the application of Nelson in combination with Smith fails for reasons advanced opposite the combination of Nelson with Campbell. Therefore one

of ordinary skill in the art would not combine Smith and Nelson and (for purposes of argument) the combination of those publications would not allow a position of obviousness under 35 U.S.C. 103 (a).

Claims 6 to 10 and 18 stand rejected under 35 U.S.C. 103 (a) based on Smith, Nelson, and Gadoury. The deficiency of each publication has been previously discussed. Accordingly, the combination must likewise fail against these claims.

In summary, reconsideration and withdrawal of all grounds of rejection is requested. A notice of allowance is respectfully solicited.

Respectfully submitted,

ANDREW G. GOLIAN
ATTORNEY FOR APPLICANT
Registration No.: 25,293
Telephone: (302) 892-0747
Facsimile: (302) 892-7343

Dated: February 27, 2006

AGG:fgl